The above shows that the hackberry knot occurs in the extreme eastern portion of the State, and extends westward nearly or quite as far as the forest vegetation occurs.

It has been reported by Geo. F. Ingram as occurring in Texas.

Prof. Halsted reports it at Ames, Iowa. (See *Journal of Mycology*, vol. V [1889], p. 85.)

It occurs, according to W. E. Castle, very abundantly in central Ohio (Licking county).

The statement in the First Annual Report, Kansas Experiment Station, p. 302, that the trees "in the dense forest woods are seldom attacked," needs, perhaps, slight modification. In numerous cases the knots have been observed, often in great abundance, in the native forests along the various streams of water in the vicinity of Manhattan.

Isolated trees are often badly attacked and soon very much disfigured. The knots, when noticed on trees planted in streets or yards for shade or ornament, should be promptly removed and burned.

The plates here reprinted are made from photographs of branches with knots, and show their usual appearance.

THE RELATIVE SWEETNESS OF DIFFERENT ALCOHOLS.

BY EDWIN E. SLOSSON, LAWRENCE.

The present investigation was undertaken to ascertain if there is any relation between the taste of organic compounds and their chemical composition. It was thought that sweetness would be the best to experiment with, on account of its simplicity and the homologous series of sweet compounds that could be obtained. Two homologous series of alcohols were chosen, and dilute solutions of each compound prepared, ranging from two per cent. to one-tenth per cent. These were put into bottles of the same form, and several bottles of pure water added. A number of persons were then asked to taste these solutions and pick out those that were sweets, paying no attention to any other taste. In order to avoid complication with the sense of smell, the tasters were required to stop the nose. By this precaution, the spirituous taste, or rather smell, and the empyreumatic odor of methyl alcohol, were almost entirely avoided. Many persons, however, were prevented from detecting any sweetness in propyl and butyl alcohols by the bitter and acid-like tastes. The sense of taste differs widely with different people, some being able to detect sweetness in solutions sixteen times more dilute than the weakest picked out by others. Cultivation of the sense greatly increases its power. It was noticed that the pharmacy students taste weaker solutions, and with much more accuracy, than collegiate students. It seems, too, that people do not agree in their ideas of what sweetness is. A part of the variation in results may also be accounted for by the fact that some kept the liquid on the upper surface of the tongue, for the sense of taste for sweetness is more delicate on the sides of the tongue.

The first alcohols tested were those of the series $C_n H_{2n+2}O$, the monohydroxy alcohols of the paraffin group. The average strength of the weakest solutions in which sweetness could be tasted was:

Methyl alcohol CH_3OH.....1 part in 45.
Ethyl alcohol C_2H_5OH.....1 part in 41.
Propyl alcohol C_3H_7OH.....1 part in 53.
Butyl alcohol C_4H_9OH.....1 part in 39.
Amyl alcohol $C_5H_{11}OH$.....None.

No one could detect sweetness in amyl alcohol, and many could not in butyl. These results, however, are so nearly the same, and the errors of observation so great, that it may be considered that the sweetness of methyl, ethyl, and propyl alcohols is about the same; that butyl is very slightly sweet, and amyl not at all.

The second series was that represented by $C_n H_{2n+2} O_n$. The results were as follows:

Methyl alcohol CH_3OH.....1 part in 45.
Glycol $C_2H_4(OH)_2$.....1 part in 124.
Glycerine $C_3H_5(OH)_3$.....1 part in 155.
Erythrite $C_4H_6(OH)_4$.....1 part in 225.
Pentatomic alcohol, unknown.
Mannite $C_6H_8(OH)_6$.....1 part in 85.

From this it appears that the sweetness increases with each additional hydroxyl group for the first four, but that mannite is much less sweet than might have been expected, from its position and its relation to all our sugars, the carbo-hydrates.

NOTES ON SOME KANSAS METEORITES.

BY F. H. SNOW, LAWRENCE.

The description of the Kiowa county, Kan., meteorites is published in full in *Science*, vol. XVI, May 9, and July 18, 1890.

Also a description of the Washington county, Kan., meteorite, may be found in *Science*, vol. XVI, July 18, 1890.

ADDITIONS TO THE FLORA OF KANSAS.

BY B. B. SMYTH, TOPEKA.

It is fourteen years since anything like a complete list of the plants of Kansas has been published. This was done by Prof. J. H. Carruth, of Lawrence. The list contained the names of 1,082 plants. Additions made since then have increased the list to 1,515 numbers. The last addition was made in 1884.

Botanical researches through the State since then, have thrown some light on the published lists, and have disclosed some new plants. Some of the plants named in those lists have not since been seen, and are not positively known to be growing in the State. The following need confirmation, and should be erased from the list of Kansas plants:

1. Corydalis montana.
2. Nasturtium limosum.
3. Hypericum ellipticum.
4. Hypericum gymnanthemum.
5. Hypericum canadense.
6. Hypericum angulosum.
7. Alsine brevifolia.
8. Agrostemma githago.
9. Paronychia canadensis.
10. Malvastrum angustum.
11. Malvastrum pedatifidum.
12. Hibiscus carolinianus.
13. Psoralea eglandulosa.
14. Psoralea scabra.
15. Astragalus goniatus.
16. Astragalus campestris.
17. Lathyrus pusillus.
18. Desmodium neglectum.
19. Cratægus parviflora.
20. Cratægus sanguinea.